

**Upper Animas Mining District
Site Background and Activities**

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(Updated October 28, 2010 by Sabrina Forrest)

Background

- The Animas River begins high in the San Juan Mountains, above Silverton, in southwest Colorado. The river flows south through Durango for almost eighty miles to the New Mexico border. It continues nearly thirty more miles, meeting the San Juan River in Farmington, New Mexico.
- The Upper Animas Mining District lies within San Juan County -13 major volcanic calderas – highly mineralized and extensively mined from 1874 to 1991. Three drainages: Mineral Creek, the Upper Animas, and Cement Creek, all of which flow to the Animas River.
- Many mine sources due to 1500 mine sites within 186 sq miles. The area had four railroads, three smelters, and over thirty mills.
- San Juan County - the smallest and one of the most economically challenged in Colorado; 150+ jobs lost in 1991 when the Sunnyside Mine closed.
- Approximately 85% of the land in the Upper Animas Basin is under public ownership. A large number of abandoned orphan mine sites are located on U.S. Forest Service (FS) or U.S Bureau of Land Management (BLM) property; however, there are many private patented claims interspersed throughout the basin.
- In 1997, the Department of Interior began an Abandoned Mined Lands Initiative (AML) to study two pilot areas; to better understand how to handle problems these sites may create. One BLM AML focus area is the Upper Animas Basin. BLM/USFS have had a significant role in the non-time critical removal actions over the years.
- Standard Metals Corp. (SMC), then Sunnyside Mining Corp. had several water quality-related and mine waste discharges, tailings releases, notices of violation, and eventually a Consent Decree with CDPHE WCQD. Sunnyside and WQCD agreed to pollution trading to deal with water quality issues. Sunnyside was released from the CD in 1999.
- There have been remediation efforts in Mineral Creek, the Upper Animas, and Cement Creek, but Cement Creek is still having a negative impact on the TMDL compliance point, known as A72.
- In the Cement Creek drainage, active water treatment began by SMC in 1970s and was updated over the years by Sunnyside. From 2001-2202, the American Tunnel had three bulkheads installed. Flow has decreased from 1,600 gpm to about 150 gpm. The Red & Bonita Mine, and other upgradient adits' and seeps discharges are now making up the difference in the American Tunnel flow. Gladstone's active water treatment stopped in 2005; settling ponds on the Herbert Placer were reclaimed in 2006.

Regulatory Involvement and Stakeholder Group Formation

- Eighteen months of negotiations between federal, state and private interests after EPA thought about watershed-wide NPL designation in the mid-1990s. Silverton citizenry and their relatives who were employed by the mining companies have always been against NPL listing or other regulatory involvement in the watershed.
- 1994 - The ARSG formed due to the mining district's numerous source areas, historic mine discharges and tailings releases, and more recent documented CWA and NPDES violations, which made the area ripe for regulation and enforcement actions.
- Formation was also in response to the Colorado Water Control Division's (WQCD) reevaluation and upgrading of water quality standards for the Upper Animas River Basin.
- The ARSG has developed a watershed plan, and Use Attainability Analysis (UAA), dated January 2001. The drainages have had TMDLs developed; Cement Creek has ambient standards, other areas have numeric standards.
- The ARSG studied 1,500 mines, focused on 173 draining mine adits and 157 mine waste sites, then identified about 33 adits and 32 waste sites to prioritize. These were judged to be the highest ranking contributors of metals in the Animas River. The ARSG prioritized their actions based on:
 - 1. Technology needed for remediation,
 - 2. Funds, and
 - 3. Property access.
- DRMS has been involved with regard to mined land permits and using available reclamation bonds.
- \$4 Million from ASARCO Silver Lake settlement in Trust; State lead, but the CDPHE and ARSG are working to identify where those funds could be used, e.g., active water treatment plant somewhere.
- SMC funds will likely be used by EPA and BLM on appropriate projects.

Stakeholders include:

- Animas River Stakeholder Group (ARSG)
- Bureau of Land Management (BLM)
- Colorado Department of Public Health and Environment, Hazardous Materials & Waste Management Division (HMWMD)
- Colorado Water Quality Control Commission (WQCC)
- Colorado Department of Public Health and Environment, Water Quality Control Division (WQCD)
- Colorado Division of Reclamation, Mining & Safety (DNR DRMS)
- Colorado Goldfields Inc.
- Gold King Mines Corp. (GKM)
- Salem Minerals Inc. (SMI)
- San Juan Corp. (SJC)
- San Juan County
- Silver Wing Company Inc. (SWC)

- Southwest Water Conservation District (SWCD)
- Sunnyside Gold Company (SGS)
- Trout Unlimited (TU)
- USDA Forest Service (USFS)
- U.S. Environmental Protection Agency (EPA)
- U.S. Geological Survey (USGS)

Stakeholder Successes - see <http://animasriverstakeholders.org/page6.php>

- By the late 1990s, ARSG-lead cleanups in the Animas and Mineral Creek have improved water quality and habitat near Silverton and downstream to the New Mexico state line. Salmon flies have been migrating upstream on the Animas River from New Mexico to the 32nd Str Bridge in Durango.
- Last fall (2009 I believe) CDOW did a fish survey in Maggie, Minnie, and Cunningham Gulches on the upper Animas drainage, which haven't been surveyed since the 80's. CDOW found a significant increase in population density and size classes. Also productivity was in the 50 to 95 lbs./acre in the three streams. These are upstream of Cement Creek.
- Ongoing support for ARSG by local community and local governments, Southwest Water Conservation District, and the maintenance of good monthly meeting participation.
- Development of a Good Sam web site and legislative efforts including lobbying in DC via ARSG and WQCC member Peter Butler and the SWCD.
- Commitment by ARSG and the BLM to a new water treatment plant constructed at Gladstone. This may be in the form of a demonstration facility.
- ARSG and DRMS completed the Silver Ledge stabilization and reclamation project in 2010 and are planning for another significant cleanup in the Mineral Creek drainage this year at the and Koehler Tunnel
- Through 2006, sources of funds to the Animas River Stakeholder process and mine waste cleanups consisted of:
 - 48% Federal Government
 - 42% Mining Industry
 - 6% State Government
 - 3% Public Interest Groups
 - 1% Local Government

Challenges/Ongoing Issues

- From ARSG perspective, they recognize there are ongoing water quality issues in Upper Cement Creek, but inability to address due to lack of Good Sam provisions that will protect from 3rd party CWA suits.
- Lack of water treatment in Gladstone is impacting the TMDL compliance point below Silverton at A72.
- Water quality flow and loads have been changing since the last bulkhead went into the American Tunnel (2002).
- The worst sources are the Gold King Mine 7 level; Red & Bonita Mine, American Tunnel, and the Mogul Mine (Grand Mogul to lesser degree).
- October 2010 electro-shocking by CDOW indicated there are declines in population and productivity downstream of Silverton. Additional macrobiotic sampling planned for Fall 2010.

EPA Involvement

- 1994 – 2004 Carol Russell represented EPA and EPR-EP in the ARSG and tracked many of the 319 projects. She fostered a non-adversarial relationship with the ARSG that, early on, was not without some significant challenges.
- In 1996, the Regional Administrator agreed to forego listing as long as the ARSG made progress in mine site remediation and water quality improvements. Since 1994, EPA has regularly attended the monthly Animas River Stakeholders Group meetings, had regular talks with the County Administrator, Town/County Planner, and community members. This has helped EPA (Carol Russell before me) find out how best to support the community.
- 2003 – 2004 – EPA's Max Dodson, Ron Cattany of DRMS (formerly CDMG) and Howard Roitman (CDPHE) created a Memorandum of Understanding for the San Juan Mountains Focus Area, a regional initiative to better coordinate federal and state programs where CWA, CERCLA, SDWA, and RCRA were involved.
- Internally, EPR management wanted One Face in a Watershed to support Land & Water Remediation, Reuse, Revitalization, and Restoration (LR⁴).
- 2005 – Present – In support of LR⁴,¹ have been involved as EPR Site Assessment Manager, watershed representative, and Brownfields Project Manager.

CERCLA/EPR Activities and Objectives:

- Keep a relationship with the Silverton, San Juan County, and ARSG going. From EPA perspective, the remaining upper Cement Creek areas that need addressed are likely NPL-caliber, but we need data and to gather more community support. EPA has taken the message to the ARSG several times that our regulatory mandate and responsibility to protect human and environmental health require us to do something to ensure that water quality does not continue to degrade and EPA wants to see movement toward water quality improvements in the short term.
- EPA gave ARSG a Targeted NPL presentation in about 2008, but some members of the ARSG and community are still unreceptive to Superfund, they still see Summitville and Leadville as the examples for NPL. Some community members think Superfund would be good for the town/county and

is needed to address the complicated site conditions and issues.

- EPA management has allowed for ongoing R8 support to keep our relationship with ARSG members going:
 - Attend ARSG meetings
 - Share data
 - Be clear with ARSG and County regarding our objectives, ability to support (where and why), and our limitations.
 - Stay involved so that CERCLA can continue to be involved. It may take time for community to see the benefit of Superfund activities.
- 2005-2010 provided project and grant management for the successful Cleanup at the Rose Walsh Smelter – EPA provided Targeted Brownfields Assessment support followed by successful Cleanup Grant for affordable housing project. Leveraged HQ sustainability funds and NREL technical support. Cleanup is complete; infrastructure planned for 2011; home construction 2011-2012.
- Identify areas that still need work and where CERCLA may be the appropriate tool.
- Assist ARSG with water quality data collection in a significantly impacted portion of the watershed; upper Cement Creek. The mine sources of interest include American Tunnel, Gold King 7 Level, Red & Bonita, Mogul, and Grand Mogul mines. These have not had a lot of characterization done due to them being associated with areas of active mining until 1991 and NPDES, and mining permits
 - EPA Site Assessment developed a Sampling and Analysis Plan for water quality sampling because we had the technical ability, lab resources and staff, and wanted to be able to weigh in on how to characterize the environmental issues for EPA and the ARSG. .
 - Collecting monthly water samples and flow measurements; and assessing changes in water quality and metals loads over time, since flows and loads have not been consistently evaluated, esp. since bulkheads were installed and the WTP was removed.
- Presently, EPA's regional team in the watershed consists of Site Assessment and Brownfields (Sabrina Forrest) and Removal (Steve Way), with technical and legal support as needed; primarily from Mike Wireman and Richard Sisk. We attend the monthly stakeholder meetings and stay in touch with locals about ongoing and new projects.
- Summer 2010 – Steve Way, BLM staff, and I conducted site recon for possible mixed ownership waste repositories; ID Red & Bonita as a possible short term project that could benefit the watershed and introduce Superfund “pluses” to locals.
- September 16, 2010 – EPA (David Ostrander, Martin Hestmark, Steve Way, and I attended ARSG mine site tour. Martin and David headed up conversations with ARSG leaders regarding the positives of Superfund involvement.
- Summer - Fall 2010 – EPA contractor recon of upper Cement Creek sites, preliminary investigation of Red & Bonita with Mike Wireman and DRMS

for to determine viability of bulkheading.

- October 25-30, 2010 – EPA contractor sampling sources, sediments/surface water in support of an HRS package.
- Planned draft analytical report and HRS package for spring 2011.
- October 2010 - Meeting with Enforcement regarding EPR strategy; EPA beginning PRP search.
 - Anticipate Spring 2011 draft PRP search documents
- Winter 2010/2011- EPA will task START to complete HRS package, using available data and the new data from October 2010 sampling effort.
 - Goal: September 2011 NPL Proposal
 - Would require that we have all the data we need to attribute Animas Impacts to Cement Creek sources.
 - Would require community input and state approval; Governor's letter likely due approximately June 30, 2011.

Other Activities:

- Planned PA/SI – KittiMac Tailings (privately owned) in the Animas drainage 5-6 miles upstream of Silverton. ARSG has indicated some interest in conducting the assessment and cleanup, but I don't know if they have enough 319 funding left for that work.
- Possible SI or removal action: Kendrick & Gelder Smelter – also in/near Cement Creek, but close to town at mouth of creek.
- Lackawanna Mill TBA may need Brownfields oversight or liaison work with CDPHE